

CLAIMS

1. A wireless communication system including a mobile station and a base station having a distributed antenna arrangement comprising a plurality of antenna elements for producing antenna signals across an area of coverage of the distributed antenna arrangement, wherein said antenna elements are arranged in groups, antenna elements producing the strongest antenna signals at the mobile station, within at least part of said area of coverage, are assigned to different said groups and antenna signals produced by the different groups of antenna elements are subjected to preset relative delays enabling the antenna signals to be combined substantially coherently in the mobile station.
2. A wireless communication system as claimed in claim 1 wherein said mobile station includes a RAKE receiver having N RAKE fingers, where N is an integer equal to the number of said groups.
3. A wireless communication system as claimed in claim 2 wherein N is 3.
4. A wireless communication system as claimed in any one of claims 1 to 3 wherein antenna signals produced by the antenna elements of one of said groups are not subjected to any preset delay.

5. A wireless communication system as claimed in any one of claims 1 to 4 including at least one delay line, wherein the or each delay line subjects antenna signals produced by all the antenna elements of a respective group to the same preset delay.
6. A method of operating a wireless communication system including a mobile station and a base station having a distributed antenna arrangement comprising a plurality of antenna elements for producing antenna signals across an area of coverage of the distributed antenna arrangement, the method including assigning antenna elements producing the strongest antenna signals at the mobile station, within at least part of said area of coverage, to different said groups, and subjecting antenna signals produced by the different groups of antenna elements to preset relative delays enabling the antenna signals to be combined substantially coherently in the mobile station.
7. A method according to claim 6 wherein the antenna signals produced by the antenna elements of one of the groups are not subjected to any preset delay.
8. A wireless communication system substantially as herein described with reference to the accompanying drawing.
9. A method of operating a wireless communication system substantially as herein

described with reference to the accompanying drawing.